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Bernstein v. United States Department of Justice:
A Cryptic Interpretation of Speech

I. INTRODUCTION

Freedom of speech is essential to the preservation of free institutions and individual dignity. Without the debate inherent in a liberal society, power coalesces around uncontested leadership, demagoguery replaces persuasion, and coercion supplants free exercise of conscience. The mere threat of such events engenders zealous protection of free speech in America. Even after 230 years, modern Americans have not forgotten the outrage kindled by the Stamp Act's clumsy suppression of speech.¹ Nevertheless, despite fervent protection of speech, even the most ardent advocate will concede the need for limits on activity protected under the First Amendment.

Certainly civilized society cannot endure the gamut of human activity and still retain a healthy balance between order and freedom. If all behavior were protected speech, the resulting anarchy would inevitably destroy society and the protections it affords individuals. At a rudimentary level, only that activity which is genuinely expressive and does not violate others' protected rights qualifies for free speech protection. Successful protection of speech must balance the coexistent and interdependent needs for order and freedom. If a standard of speech protection is overly burdensome (as was the Stamp Act), then individuals suffer and may react violently. If a standard of speech is overly concerned with freedom, then freedom itself is in peril to the degree it is dependent on an ordered society. Determining the proper balance between social order and individual freedom is not a precise science, especially in a rapidly changing society.

Recent technological advances have forced society to reevaluate its standard of free speech. Among the many changes it has brought to society, the computer revolution has compelled the courts to de-

1. See CHARLES A. BEARD & MARY R. BEARD, A BASIC HISTORY OF THE UNITED STATES 95-98 (1944). The Stamp Act, among other things, regulated speech by requiring a stamp on several types of papers and documents, including licenses to practice law, newspapers, and other circulating publications. The lawyers and publishers, each of whom made their living by the spoken and written word, were instrumental in rallying opposition to the Act. See *id.*

termine whether or not encryption source code qualifies for First Amendment free speech protection. An encryption program is a computer program capable of scrambling and deciphering information. Computer operators using the same encryption program can prevent unintended parties from accessing sensitive information. As with other computer programs, encryption programs are written in source code, using computer languages such as C+ or Cobalt. A program's source code must be "compiled" or translated into object code, a series of ones and zeroes, before it can actually operate a computer.

A determination that encryption source code is or is not protected speech involves complex policy decisions in a burgeoning computer culture and forces us to ascertain how the first principles of free speech will best be furthered. In the pivotal case *Bernstein v. United States Department of Justice*,² the Ninth Circuit decided that encryption source code is protected free speech. This Note will focus on why encryption source code is not speech within the purview of the First Amendment and will advance a test distinguishing activity that is primarily expressive from activity that is primarily functional.³ This test would protect only activity that is primarily expressive. Part II.A explores the major purposes of free speech protection, Part II.B reviews relevant Supreme Court precedent defining the contours of free speech protection, and Part II.C presents pre-*Bernstein* cases dealing with speech protection for encryption source code. Part III presents the facts and reasoning of the principal case. Part IV argues that the *Bernstein* decision is inconsistent with established free speech precedent and that a test distinguishing unprotected functional activity from protected expressive activity is more consonant with previous Supreme Court decisions and the underlying purposes of free speech.

2. 176 F.3d 1132 (9th Cir. 1999).

3. In addition to making the determination that encryption source code was speech, the *Bernstein* court addressed several other issues, including: whether the government had legitimate interests in imposing licensing restrictions on the export of encryption technology; whether the licensing scheme was overly-broad in its application; and whether the licensing scheme could withstand a facial challenge. *See id.* The only issue this Note addresses is whether the court properly determined that encryption source code was speech. Other issues addressed by the court are beyond the scope of this Note.

II. BACKGROUND

A. Purposes of Free Speech

This Note is not intended to be a comprehensive authority on the multitudinous theories detailing the purposes of free speech. However, a general understanding of a major dichotomy in free speech theory will be useful in evaluating the benefits of the functional/expressive test advocated in this Note.

In academic circles, each free speech scholar seems to have his own categorization of free speech theory and theorists. For example, D.F.B. Tucker has identified two major groupings: (1) the “Functional Liberal Theories” which include the “Utilitarian Functionalism” theory (which includes theorists John Stuart Mill and Justice Brandeis), the “Indirect Utilitarianism” theory (which includes theorists David Lyons, Thomas Emerson, and Frederick Schauer) and the “Democratic Functionalism” theory (which includes theorist Alexander Meiklejohn); and (2) the “Deontological Liberal Theories” which include the “Lockean Liberalism” theory (which includes theorists John Locke, Hugo Black, and Chief Justice Burger), and the “Rawlsian Alternative” theory (which includes theorists John Rawls, Thomas Scanlon, and Ronald Dworkin).⁴ On the other hand, David A.J. Richards has identified the “Utilitarian Models” (which include John Stuart Mill and Oliver Wendell Holmes), the “Perfectionist Models” (which include John Stuart Mill, Finnis, George, and Haksar), the “Argument from Democracy” theory (which includes John Hart Ely, Cass Sunstein, Owen Fiss, C. Edwin Baker, and Kent Greenawalt), and finally “The Toleration Model” (which Richards himself advocated).⁵ As one can see, each scholar has his own complicated method of classifying each theory and theorist. Because legal reasoning rests upon free speech theory, a general treatment of prevailing theories is in order. For the purposes of this Note, two general groups of prevailing theories will be referred to as the utilitarian theory and the libertarian theory.

4. See D.F.B. TUCKER, LAW, LIBERALISM, AND FREE SPEECH 9-42 (1985).

5. David A.J. Richards, *Constitutional Legitimacy, the Principle of Free Speech, and the Politics of Identity*, 74 CHI.-KENT L. REV. 779, 788-803 (1999).

1. The utilitarian theory: Free speech as a tool to advance democracy and exchange ideas

In *Roth v. United States*,⁶ Justice Brennan, writing for the Supreme Court, stated: "The protection given speech and press was fashioned to assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people."⁷ Accordingly, speech is a utilitarian tool designed to promote democracy. John Stuart Mill, one of the best known proponents of the utilitarian theory, also described how a community injury is avoided when each individual is able to express his opinions freely: "[T]he peculiar evil of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation"⁸ Similarly, Walter Lippmann, the twentieth century pundit, observed: "The right to speak freely is one of the necessary means to the attainment of the truth. That, and not the subjective pleasure of utterance, is why freedom is a necessity in the good society."⁹ Alexander Meiklejohn, Robert Bork, Cass Sunstein, and Thomas Emerson have also advocated differing strands of utilitarian theory in support of free speech.¹⁰ The utilitarian view that free speech preserves and perfects democratic institutions has had great impact on twentieth century jurisprudence.¹¹

2. The libertarian theory: Free speech as a protection of individual liberty and self-expression

According to the libertarian theory, protection of speech is an end in itself, one that secures dignity to each individual by protecting his influence on society through expressive means. In *Cohen v. California*,¹² Justice Harlan wrote:

6. 354 U.S. 476 (1957).

7. *Id.* at 484.

8. JOHN STUART MILL, ON LIBERTY AND UTILITARIANISM, 19 (Alfred A. Knopf, Inc. 1992) (1859).

9. WALTER LIPPMANN, THE PUBLIC PHILOSOPHY, *reprinted in* THE ESSENTIAL LIPPMANN at 193 (Clinton Rossiter & James Lare eds., Random House 1963).

10. *See* THE FIRST AMENDMENT 10-13 (Geoffrey R. Stone et. al. eds., 1999).

11. *See* John O. McGinnis, *The Once and Future Property-Based Vision of the First Amendment*, 63 U. CHI. L. REV. 49 (1996). McGinnis states, "the perfection of collective democratic processes was the most important rationale for the expansion of free speech during [the last fifty years]. . . ." *Id.* at 51.

12. 403 U.S. 15 (1971).

The constitutional right of free expression . . . put[s] the decision as to what views shall be voiced largely into the hands of each of us, in the hope that use of such freedom will ultimately produce a more capable citizenry and more perfect polity and in the belief that no other approach would comport with the premise of individual dignity and choice upon which our political system rests.¹³

Similarly, John O. McGinnis, a professor at Cardozo Law School, relied on James Madison and John Locke in support of an interesting property-based view of freedom of speech:

Madison states that “[g]overnment is instituted to protect property of every sort,” including, in Madison’s view, man’s property in his “opinions and the free communication of them.” Thus, according to the first principles of the father of the Bill of Rights, free speech is not simply or even principally a means for sustaining a particular form of government; to the contrary, protecting free speech and other property rights is the end for which government is constituted.

. . . .

. . . The only legitimate Lockean restrictions on the transmission of information per se are those designed to prevent information from being used to deprive others of their life or property by force or fraud.¹⁴

Finally, David A.J. Richards stated:

[T]he significance of free expression rests on the central human capacity to create and express symbolic systems, such as speech, writing, pictures, and music. . . . Freedom of expression permits and encourages the exercise of these capacities: it supports a mature individual’s sovereign autonomy in deciding how to communicate with others In so doing, it nurtures and sustains the self-respect of the mature person.

. . . .

13. *Id.* at 24.

14. McGinnis, *supra* note 11, at 68, 86 (quoting James Madison, *Property*, NAT’L GAZETTE (Mar. 27, 1792) reprinted in 14 THE PAPERS OF JAMES MADISON 266-68 (Robert A. Rutland et al. eds., 1983)).

The value of free expression, in this view, rests on its deep relation to self-respect arising from autonomous self-determination without which the life of the spirit is meager and slavish.¹⁵

These sources persuasively argue that individual expression is not protected because it is useful to society but because self-expression is essential to the good life. Even though the libertarian and utilitarian theories caution against curtailing individual expression, the Supreme Court has limited freedom of speech in several instances.

B. Judicial Limits on Freedom of Speech

Freedom of speech controversies represent the classic conflict between the minority and majority. Typically, the majority passes a law restricting what the minority believes is its right to expression. The courts, often regarded as guardians of minority rights, frequently invalidate the will of the majority because it infringes on the minority's freedom of speech. An example of great protection of an individual's right to speak is *New York Times v. Sullivan*,¹⁶ where the Supreme Court held that individuals could legally express opinions about public figures that would normally be illegal under state defamation laws. At the same time, the courts have not endorsed an absolute right to expression. There are several instances where the judiciary, sensitive to majority mores, has refused to protect what the minority argues is its right to expression.

In cases involving "fighting words" and obscenity the courts have held that the minority does not have a right to expression. The Supreme Court has determined that "'fighting' words . . . are no essential part of any exposition of ideas, and are of such slight social value as a step to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality."¹⁷ Similarly, in *Miller v. California* the Supreme Court held that "obscene material is unprotected by the First Amendment."¹⁸ The Court presented a test to determine obscenity:

15. David A.J. Richards, *Free Speech and Obscenity Law: Toward a Moral Theory of the First Amendment*, 123 U. PA. L. REV. 45, 62 (1974).

16. 376 U.S. 254 (1964). The Court held that a public official cannot prevail on a defamation action unless the defamatory material was published with actual malice. *See id.* at 279-80. Thus, speech targeting public officials is more protected than other speech which is subject to traditional defamation principles.

17. *Chaplinsky v. New Hampshire*, 315 U.S. 568, 572 (1942).

18. 413 U.S. 15, 23 (1973) (citations omitted).

The basic guidelines for the trier of fact must be: (a) whether the “average person, applying contemporary community standards” would find that the work, taken as a whole, appeals to the prurient interest; (b) whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value.¹⁹

As one can observe, these are situations where the judiciary is sensitive to the majority will and limits the ability of individuals and minorities to speak freely.

One area of Supreme Court case law has particular relevance to encryption source code. This line of precedent is often referred to as the “‘speech-conduct’ distinction” or the “expression-action dichotomy.”²⁰ In *O’Brien v. United States*, the Supreme Court stated: “We cannot accept the view that an apparently limitless variety of conduct can be labeled ‘speech’ whenever the person engaging in the conduct intends thereby to express an idea.”²¹ Under this reasoning, activity must reach a certain level of expressiveness before it will qualify as speech for First Amendment purposes. The Court reinforced this point in *City of Dallas v. Stanglin* when it stated: “It is possible to find some kernel of expression in almost every activity a person undertakes—for example, walking down the street or meeting one’s friends at the shopping mall—but such a kernel is not sufficient to bring the activity within the protection of the First Amendment.”²² Under the Court’s analysis, activity peppered with elements of expression must reach a certain level of expressiveness before that activity will qualify for free speech protection. In another “speech-conduct” case, *Spence v. Washington*, the Court found the activity at issue expressive enough to qualify as speech because it evinced “[a]n intent to convey a particularized message . . . , and in the surrounding circumstances the likelihood was great that the message would be understood by those who viewed it.”²³

Several principles emerge from the “speech-conduct” precedents. In order to qualify as speech: (1) there must be more than the actor’s

19. *Id.* at 24 (citations omitted).

20. STEVEN H. SHIFFRIN & JESSE H. CHOPER, *THE FIRST AMENDMENT* 209 (2nd ed. 1996).

21. 391 U.S. 367, 376 (1968).

22. *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989).

23. 418 U.S. 405, 410-11 (1974).

mere intent to communicate an idea;²⁴ (2) the activity must contain more than a “kernel of expression;”²⁵ and (3) the likelihood must be great that those who experience the message will understand it.²⁶

C. *Pre-Bernstein Decisions*

As one readily observes, different types of speech receive different levels of protection. On a more fundamental level, if an activity is not sufficiently expressive, the government can regulate that activity without violating free speech rights. Recent technological advances have forced courts to determine if encryption software is expression meriting free speech protection or if it is activity that is not expressive enough to qualify as speech.

The exportation of encryption source code has been subject to some form of licensing regulation since 1977.²⁷ The primary purpose of these licensing regulations has been to protect national security interests by withholding encryption technology from organized crime, espionage rings, and terrorists. The first case to address the issue of whether encryption licensing regulations violated free speech protections was *Karn v. United States Department of State*,²⁸ decided in March of 1996.

I. *Karn v. United States Department of State*

Bruce Schneier authored a book on cryptography, which was sold with an accompanying diskette, both of which contained an encryption source code. Philip Karn was interested in making money by exporting these items and wanted to know whether he would need an export license under the relevant International Traffic in Arms Regulations (ITAR).²⁹ After Karn petitioned, the State Department concluded that the book was not subject to ITAR but the diskette was. Karn appealed this determination to the Assistant Secretary of State for Political Military Affairs, Thomas McNamara.³⁰ McNamara

24. See *O'Brien v. United States*, 391 U.S. 367, 376 (1968).

25. *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989).

26. See *Spence v. Washington*, 418 U.S. 405, 410-11 (1974).

27. For a detailed history of the encryption exportation regulations, see Ryan Alan Murr, Comment, *Privacy and Encryption in Cyberspace: First Amendment Challenges to ITAR, EAR and Their Successors*, 34 SAN DIEGO L. REV. 1401, 1413-20 (1997).

28. 925 F. Supp. 1 (D.D.C. 1996).

29. See *id.* at 3-4.

30. See *id.* at 4.

also concluded that because the diskette contained encryption software it was a “defense article” according to the United States Munitions List.³¹ Karn brought an action in the District Court for Washington D.C. alleging, among other things, that regulation of the diskette violated his free speech rights.³²

According to the decision, Karn claimed the diskette was speech because it “contain[ed] ‘comments’ interspersed throughout the source code which are useful only to a human and are ignored by the computer, and because the source code and comments taken together teach humans how to speak in code.”³³ In addressing Karn’s free speech claim, the court simply assumed the diskette was speech within the meaning of the First Amendment.³⁴ Even with this generous assumption, the court upheld the constitutionality of ITAR under the *O’Brien* test because it believed the regulations were content neutral, were within the constitutional powers of the government, and were narrowly tailored to an important and substantial government interest.³⁵ Moreover, the court held that Karn improperly requested the court to decide encryption policy—an issue more appropriately resolved by Congress and the President.³⁶ Because the *Karn* court simply assumed encryption source code was speech, the remainder of the court’s analysis is not essential to this Note. However, *Junger v. Daley*,³⁷ the only other pre-*Bernstein* case to address the issue, is much more thorough in its analysis than the *Karn* decision.

2. *Junger v. Daley*

Peter Junger, a law professor teaching a computer course at Case Western Reserve University Law School, maintained a website to which he posted class information and other items of interest to him.³⁸ Junger wanted to post to his website encryption source code

31. *See id.*

32. *See id.* at 3.

33. *Id.* at 9.

34. *See id.* (“[T]he Court will assume that the protection of the First Amendment extends to the source code and the comments on the plaintiff’s diskette.” (citations omitted)).

35. *See id.* at 10-12.

36. *See id.* at 3. (“This is a ‘political question’ for the two elected branches under Articles I and II of the Constitution.”).

37. 8 F. Supp.2d 708 (N.D. Ohio 1998).

38. *See id.* at 713.

that he had developed and requested that the Commerce Department determine whether or not such a posting would require a license under ITAR.³⁹ Because under ITAR “almost any posting of software on the Internet is an export,”⁴⁰ the Commerce Department determined, on July 4, 1997, that Junger would need a license.⁴¹ Junger brought an action claiming the licensing scheme was an invalid prior restraint on his right to speak freely.⁴²

The court rejected Junger’s arguments and granted the government’s summary judgment motion. In reaching this result, the *Junger* court set up a standard that differentiated between expressive and functional activity.⁴³ In other words, activity with communicative purposes and characteristics should be protected as speech, but activity intended to perform some nonexpressive function should not be protected. The “most important issue,” as the court saw it, was “whether the export of encryption software source code is sufficiently expressive to merit First Amendment protection.”⁴⁴ The court did not provide a clear definition of what activity qualified as “sufficiently expressive.” However, it did determine that “inherently expressive. . . software contains an ‘exposition of ideas,’”⁴⁵ which would presumably qualify as sufficiently expressive for free speech protection. At the same time, the court indicated that “inherently functional” software would not meet the sufficiently expressive standard.⁴⁶ The court held that encryption source code was “inherently functional” and its exportation was not protected by the First Amendment.⁴⁷

Of great importance to the court was the purpose behind free speech protection—the preservation of the political process. “The protection given speech and press was fashioned to assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people.”⁴⁸ But not all human activity can be

39. *See id.* at 714.

40. *Id.* at 713.

41. *See id.* at 714.

42. *See id.* at 711.

43. *See id.* at 714.

44. *Id.* at 715.

45. *Id.* at 716.

46. *See id.*

47. *See id.* at 715.

48. *Id.* at 715-16 (quoting *Roth v. United States*, 354 U.S. 476, 484 (1957)).

protected under the First Amendment: “[S]peech that is ‘so far removed from any exposition of ideas, and from truth, science, morality, and arts in general, in its diffusion of liberal sentiments on the administration of Government’ lacks First Amendment protection.”⁴⁹ Based on these principles, the court reasoned that encryption source code “carries out the function of encryption” rather than “merely explain[ing] a cryptographic theory or describ[ing] how the software functions.”⁵⁰ The court did admit that “encryption source code may occasionally be expressive,” but “[f]or the broad majority of persons . . . , the value comes from the function the source code does.”⁵¹ Because it is “inherently functional” and not “inherently expressive” from the viewpoint of a “majority of persons,” the court held that encryption source code did not merit First Amendment protection.

The *Bernstein* case is the only circuit court decision to address free speech protection for encryption source code. The decision is the result of a legal contest that has produced four published opinions,⁵² is presently under en banc review, and will likely be heard by the Supreme Court. In each of the published opinions, the United States District Court for the Northern District of California and the Ninth Circuit have held encryption source code to be speech protected by the First Amendment.

49. *Id.* at 716 (quoting *Virginia State Bd. of Pharmacy v. Virginia Citizens Consumer Council, Inc.*, 425 U.S. 748, 762 (1976)).

50. *Id.*

51. *Id.* at 715, 716.

52. *See Bernstein v. United States Dep’t of State*, 974 F. Supp. 1288 (N.D. Cal. 1997) [hereinafter *Bernstein III*]; *Bernstein v. United States Dep’t of State*, 945 F. Supp. 1279 (N.D. Cal. 1996) [hereinafter *Bernstein II*]; and *Bernstein v. United States Dep’t of State*, 922 F. Supp. 1426 (N.D. Cal. 1996) [hereinafter *Bernstein I*]. In *Bernstein I* the court denied the government’s motion to dismiss for lack of justiciability. In so holding, the court determined that encryption source code was protected speech. *See Bernstein I*, 922 F. Supp. at 1432, 1436. In *Bernstein II* the court granted *Bernstein*’s motion for summary judgment and concluded that ITAR was unconstitutional on its face as applied to *Bernstein*. *See Bernstein II*, 945 F. Supp. at 1290, 1296. In *Bernstein III* the court basically issued the same judgment as in *Bernstein II* in response to an executive order that changed the ITAR scheme to Export Administration Regulations (EAR) which were also held invalid. *See Bernstein III*, 974 F. Supp. at 1308. The fourth published decision is authored by the Ninth Circuit and is the principal opinion discussed in this Note.

III. *BERNSTEIN V. UNITED STATES DEPARTMENT OF JUSTICE*⁵³A. *The Facts*

As a graduate student at University of California at Berkeley, Daniel Bernstein developed an encryption program he called "Snuffle."⁵⁴ Like other encryption programs, Snuffle was capable of scrambling and unscrambling information so that only certain parties could understand the information. Bernstein wished to post Snuffle in source code form to the Internet in order to share his program with the scientific community.⁵⁵ Upon Bernstein's inquiry, the State Department determined he would need a license to "export" the encryption program.⁵⁶ "Exportation" under the relevant ITAR and Export Administration Regulations (EAR) provisions includes publishing to the Internet.⁵⁷

Bernstein filed an action in the Northern District of California alleging, among other things, that the licensing regulations violated his First Amendment rights. As in *Junger*, the government argued that encryption source code was inherently functional and undeserving of free speech protection.⁵⁸ The government also emphasized the national security interests furthered by ITAR and EAR: "[E]ncryption can be used to conceal communications of terrorists, drug smugglers, or others intent on taking hostile action against U.S. facilities, personnel, or security interests."⁵⁹ Despite the government's arguments, the Ninth Circuit upheld the lower court's ruling that Snuffle was protected speech within the meaning of the First Amendment and that the government's licensing scheme was an unconstitutional prior restraint.

53. 176 F.3d 1132 (9th Cir. 1999). The *Bernstein* decision which is the subject of this Note was withdrawn for en banc review on September 30, 1999. See 192 F.3d 1308 (9th Cir. 1999).

54. *Bernstein*, 176 F.3d at 1136.

55. See *id.*

56. See *id.*

57. See *id.* at 1137.

58. See *id.* at 1142.

59. *Id.* at 1137 (quoting Lowell Decl. at 4, Appellant's Excerpts of Record at 97).

B. The Court's Reasoning

The *Bernstein* court reached its determination that encryption source code is speech in three steps. First, the court emphasized the expressive characteristics of source code. Second, the court rejected a test that would deny First Amendment protection to speech that is both expressive and functional. Third, while the court did not openly admit its decision was result-oriented, it was arguably motivated by its disagreement with the policy underlying the encryption regulations.

In its first analytical step, the court emphasized the expressive characteristics of source code: “The distinguishing feature of source code is that it is meant to be read and understood by humans and that it can be used to express an idea or a method.”⁶⁰ “It must be emphasized . . . that source code is merely text. . . .”⁶¹ While source code is only text, the court admitted that “only those trained in programming can easily understand” the ideas and methods expressed.⁶²

The court accentuated the expressive elements of source code by limiting its analysis to the experience of Bernstein and other programmers. For Bernstein and other highly skilled programmers, source code is a medium that effectively communicates complex mathematical principles, much like economists’ and mathematicians’ use of graphs.⁶³ Thus, in determining whether source code is expression, the court implicitly excluded the “untutored layperson” who would use Bernstein’s program without ever understanding its expressive elements.⁶⁴ After all, “[i]t is Bernstein’s right to speak, not the rights of foreign listeners to hear, that we are concerned with here.”⁶⁵

In contrast, the government emphasized source code’s functional properties: “[Source code] can be used to control directly the operation of a computer without conveying information to the user.”⁶⁶ The court countered this argument by distinguishing source code from object code. Source code, written in computer languages such

60. *Id.* at 1140.

61. *Id.* at 1140 n.11.

62. *See id.* at 1140.

63. *See id.* at 1141.

64. *See id.* at 1140.

65. *Id.* at 1139 n.9.

66. *Id.* at 1142.

as Cobalt or C+, cannot operate a computer until converted to object code. A computer program, known as a compiler, translates source code into object code, which is a series of ones and zeroes arranged so they represent the same computer commands contained in the source code. The court stated that “ignoring the distinction between source and object code obscures the important fact that source code is not meant solely for the computer, but is rather written in a language intended also for human analysis and understanding.”⁶⁷ By emphasizing the differences between source and object code and limiting its analysis to programmers, the court found encryption source code sufficiently expressive to merit First Amendment protection.

In the second stage of its reasoning, the court criticized “the government’s argument . . . [which] suggests that even one drop of ‘direct functionality’ overwhelms any constitutional protections that expression might otherwise enjoy. This cannot be so.”⁶⁸ It is proper to reject the “one drop of direct functionality” test, but the court does not indicate what degree of functionality, if any, will disqualify an activity from First Amendment protection. The court simply stated: “[W]e reject the notion that the admixture of functionality necessarily puts expression beyond the protections of the Constitution.”⁶⁹ Thus, the court implied that if an activity has only minimal expressive elements it *may* still enjoy First Amendment protection. Interestingly, the *Bernstein* majority does not mention *Junger* or address the inherently functional/expressive test set forth in *Junger*. The *Bernstein* dissent, however, relies extensively on *Junger*.⁷⁰

The third element of the court’s analysis was its zealous disagreement with the policy judgments behind encryption controls: the “government is intentionally retarding the progress of the flourishing science of cryptography.”⁷¹ After citing numerous examples of society’s reliance on electronic information storage and communication, the court declared:

67. *Id.*

68. *Id.*

69. *Id.*

70. *See id.* at 1149 (Nelson, J. dissenting) (“The *Junger* decision thus adds considerable support for the propositions that encryption source code cannot be categorized as pure speech and that the functional aspects of encryption source code cannot be easily ignored or put aside.”).

71. *Id.* at 1145.

Whether we are surveilled by our government, by criminals, or by our neighbors. . . never has our ability to shield our affairs from prying eyes been at such a low ebb. The availability and use of secure encryption may offer an opportunity to reclaim some portion of the privacy we have lost. . . . [I]t is important to point out that Bernstein's is a suit not merely concerning a small group of scientists laboring in an esoteric field, but also touches on the public interest broadly defined.⁷²

By referring to the right to privacy, "the public interest broadly defined," and benefits of encryption technology, the court seemed to be motivated by more than just free speech concerns. Unfortunately, the *Bernstein* court does not address the determination made in *Junger* that ITAR and EAR licensing provisions were political questions that did not implicate freedom of speech and, therefore, were not justiciable. Arguably, the *Bernstein* court used Bernstein's case to overrule Executive and Congressional policy and better serve "the public interest broadly defined."

IV. ANALYSIS

As explained in Part III.C, the *Bernstein* court reached its conclusion in three basic steps. Part IV.A pinpoints errors in the court's reasoning, concluding that the court should have (1) relied on *O'Brien v. United States* and *Spence v. Washington* and analyzed Bernstein's source code from the viewpoint of all affected parties, (2) relied on *City of Dallas v. Stanglin* and determined whether Bernstein's encryption source code represented more than a "kernel of expression," and (3) exercised judicial restraint by deferring to policy determined by the political process. Part IV.B argues that Supreme Court cases and the utilitarian and libertarian theories support First Amendment protection for technological speech, but not absolute protection for all technological activity. Part IV.C argues that the *Bernstein* analysis is too broad in its protection of technological activity. Finally, Part IV.D presents a factored test distinguishing between protected expressive technological activity and unprotected functional technological activity.

72. *Id.* at 1146 (citations omitted).

*A. Errors in the Court's Reasoning**1. The court ignored O'Brien and Spence by analyzing source code from the subjective viewpoint of Bernstein and other programmers*

The *Bernstein* court's first error is that it analyzed source code solely from the perspective of Bernstein and other highly-skilled programmers. The *Bernstein* court's approach is flawed because it ignores the perspective of the majority of those affected by Bernstein's program. The court stated, "It is Bernstein's right to speak, not the rights of foreign listeners to hear, that we are concerned with here."⁷³ It is difficult to find meaningful limits in this subjective analysis, for rarely will an individual view an activity for which he is seeking First Amendment protection as nonexpressive. As the Supreme Court stated in *O'Brien*: "We cannot accept the view that an apparently limitless variety of conduct can be labeled 'speech' whenever the person engaging in the conduct intends thereby to express an idea."⁷⁴

While the *Bernstein* court did not use a purely subjective analysis (the court at least required that other programmers be able to understand the expressive elements of the source code), it still ignored *Spence v. Washington*. In that case the Supreme Court stated that in order for conduct mixed with elements of expression to receive first amendment protection, "the likelihood [must be] great that the message would be understood by those who viewed it."⁷⁵ Unfortunately, the *Bernstein* court did not apply this principle.

In *Bernstein*, those who had access to Bernstein's encryption source code were Internet users who would download the program. For these people, the program would have no purpose other than performing its intended function—to encrypt. Even for programmers who understand the logarithmic ideas incorporated into source code, the source code experience is partly expressive and partly functional. By analyzing it from the perspective of all those who experience it, source code has an overwhelmingly functional purpose. If the *Bernstein* court addressed the principles in *O'Brien* and *Spence*, it is likely the encryption source code would not qualify as speech.

73. *Id.* at 1139 n.9.

74. *O'Brien v. United States*, 391 U.S. 367, 376 (1968).

75. 418 U.S. 405, 411 (1974).

2. The court ignored Stanglin by protecting an activity that society would view as having only a kernel of expression

In *City of Dallas v. Stanglin*, the Supreme Court stated that “[i]t is possible to find some kernel of expression in almost every activity a person undertakes—for example, walking down the street or meeting one’s friends at the shopping mall—but such a kernel is not sufficient to bring the activity within the protection of the First Amendment.”⁷⁶ Despite this principle, the *Bernstein* court seems to have extended free speech protection to an activity that society views as having only a kernel of expression. Because the court did not require that the encryption program be primarily expressive to be protected, the court’s holding myopically provided free speech protection to only partly expressive activity. In doing so, the court contradicted *Stanglin*.

Because humans are creatures of will, there is no human activity that does not contain some measure of expression. Recognizing the potential danger of its analysis, the *Bernstein* court tried to “emphasize the narrowness of [its] First Amendment holding” by stating it “do[es] not hold that all software is expressive.”⁷⁷ But under the court’s analysis, there does not seem to be any human-produced software that cannot communicate some mathematical or methodological idea to another programmer. Thus, the purported narrowness of the court’s holding is illusory.

3. The court should have exercised judicial restraint and deferred to political determinations of policy

The *Bernstein* court’s views on encryption policy are superior to those reflected in the encryption regulations at issue. ITAR and EAR unwisely discourage the development of valuable encryption technology because they remove profits earned by exporting the technology. In a world becoming exponentially more dependent on computers, encryption technology has never been needed more.

As one computer security specialist has said: “There is no such thing as security, only precaution.”⁷⁸ Thus, the purpose of computer

76. *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989).

77. *Bernstein v. United States Dep’t of Justice*, 176 F.3d 1132, 1145 (9th Cir. 1999).

78. Telephone interview with Alan Wyble, computer security systems specialist (Sept. 2, 1999).

security is simply to make it too time consuming and expensive for a hacker to break in. With sensitive and extremely valuable information available at financial institutions, medical centers, law enforcement facilities, military bases, and businesses, the need for more advanced precautionary tools is evident. There have even been reports of military schools specializing in computer warfare.⁷⁹ And the United States Office of the Comptroller of Currency recently issued a bulletin warning of “the threats and vulnerabilities created by cyberterrorism to the financial services industry.”⁸⁰

The above are powerful arguments that government should refrain from hindering encryption technology; however, the *Bernstein* court irresponsibly used its judicial role as impartial arbiter to implement its own encryption policy. In reaching its holding, the *Bernstein* court relied in part on “an opportunity to reclaim some portion of the privacy we have lost.”⁸¹ It seems irresponsible for the *Bernstein* court to rely on the right to privacy in determining that encryption source code is protected speech.

The *Karn* court saw the free speech argument for what it was:

The plaintiff, in an effort to export a computer diskette for profit, raises . . . meritless constitutional claims because he and others have not been able to persuade the Congress and the Executive Branch that the technology at issue does not endanger the national security. This is a “political question” for the two elected branches under Articles I and II of the Constitution.⁸²

Unlike the *Karn* court, the *Bernstein* court concluded differently because it disagreed with the policy behind encryption regulations and substituted its judgment for that of Congress and the president.⁸³

79. *Computer Security in China*, E. ASIAN EXECUTIVE REP. (International Executive Reports, Ltd.), July 15, 1998. The article cites the China Defense News of October 16, 1998, where Shen Weiguang, the “Chinese ‘information war’ expert,” notes the rise of information war specialties in military schools. *Id.*

80. *Cybercrimes: Infrastructure Threats from Cyber-terrorists*, CYBERSPACE LAW., Apr. 1999, at 23. Clifford A. Wilke, Office of Comptroller of the Currency director of Bank Technology Division, issued the bulletin on March 5, 1999. The bulletin continued, “OCC’s concern is with how rapidly the threats from terrorists and criminals are evolving in terms of technology, and our banks’ ability to develop and implement adequate preventative controls and countermeasures.” *Id.*

81. *Bernstein*, 176 F.3d at 1146 (citations omitted).

82. *Karn v. United States Dep’t of State*, 925 F. Supp 1, 2-3 (D.D.C. 1996).

83. *Karn* is not distinguishable from *Bernstein* on the basis of profit seeking. While

B. Technological Speech

As we have seen, all forms of communication are not created equal. For example, opinions regarding public figures receive great constitutional protection.⁸⁴ On the other hand, conduct which is not pure speech but has expressive elements enjoys less constitutional protection,⁸⁵ and obscene materials are not protected at all.⁸⁶ In this speech protection hierarchy, one wonders what protection technological activity should receive. In order to understand why the *Bernstein* court applied an inappropriate level of protection to technological activity, we must explore Supreme Court precedent and the theories supporting free speech.

1. The Supreme Court would probably protect technological speech under the First Amendment

There is little case law on technological speech. Allen M. Shinn, Jr., a senior official at the National Science Foundation, stated: “The Supreme Court has not decided whether scientific speech is protected under the First Amendment.”⁸⁷ However, the Supreme Court has recognized the value of scientific speech in various settings. For example, in the obscenity cases, material that “the ‘average person, applying contemporary community standards’ would find . . . appeals to the prurient interest . . . and [is] patently offensive” is still protected under the First Amendment if it does not “lack[] serious literary, artistic, political, or scientific value.”⁸⁸ In other words, even obscene material will be protected if it has serious scientific value. By placing scientific speech on the same footing as literary, artistic, and

there is no evidence Bernstein wanted to charge money to those who accessed his website, the success of Bernstein as a scientist and programmer largely turns on his reputation and quality of work. One cannot seriously contend that Bernstein did not have a professional, and, therefore pecuniary, interest in publishing his work to the Internet.

84. See *New York Times v. Sullivan*, 376 U.S. 254 (1964). The Court held that a public official cannot prevail on a defamation action unless the defamatory material was published with actual malice. See *id.* at 279-80. Thus, speech targeting public officials is more protected than other speech which is subject to traditional defamation principles.

85. See; *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989); *Spence v. Washington*, 418 U.S. 405, 410-11 (1974); *O'Brien v. United States*, 391 U.S. 367, 376 (1968).

86. See *Miller v. California*, 413 U.S. 15, 23 (1973).

87. Allen M. Shinn, Jr., *The First Amendment and the Export Laws: Free Speech on Scientific and Technical Matters*, 58 GEO. WASH. L. REV. 368, 378 (1990).

88. *Miller*, 413 U.S. at 24 (citations omitted).

political speech, it seems likely that the Supreme Court would protect technological speech.

2. The theories of free speech purposes also support protecting technological speech

The underlying theories of free speech also support protection of technological communications. Under the utilitarian theory, one need only observe the standard of living modern technology has provided to conclude that the theory would protect technological speech. A strong argument can be made even under the democratic process strain of the utilitarian theory that technological speech should be protected because it is a democratizing force. For example, a common saying on the American western frontier was: "God created men; Colonel Colt made them equal."⁸⁹ One instinctively detects the democratizing force of Colt's six-shooter, also known as the "Equalizer." Similarly, Roger Burlingame, has argued that inventors such as Whitney, Fulton, and McCormick provided the social cohesion that made possible the union envisioned by Lincoln and Webster.⁹⁰ As James Ferguson has argued: "It seems clear . . . that the social value of technological expression is so substantial that this category of speech cannot be viewed as warranting less protection than other forms of expression."⁹¹

The libertarian theory would also support protection of technological speech. As Ferguson also argued, a libertarian theory of "free expression clearly applies to scientific communications because they represent the final product in a creative intellectual process. . . . The personal satisfaction arising from such creative intellectual work accounts for much of the scientist's interest in a system of free scientific expression."⁹² Similarly, in *The Existential Pleasures of Engineering*, Samuel Florman wrote: "The beauty of the machine is pure, like mathematics. It is also, paradoxically, imbued with the vitality of humanity, since it is exclusively man-made."⁹³ Likewise, the great ar-

89. WILLIAM HOSLEY, COLT: THE MAKING OF AN AMERICAN LEGEND 66 (1996).

90. See ROGER BURLINGAME, THE MARCH OF THE IRON MEN: A SOCIAL HISTORY OF UNION THROUGH INVENTION 421-36 (1938).

91. James R. Ferguson, *Scientific and Technological Expression: A Problem in First Amendment Theory*, 16 HARV. C.R.-C.L. L. REV. 519, 546-47 (1981).

92. *Id.* at 533, 535.

93. SAMUEL C. FLORMAN, THE EXISTENTIAL PLEASURES OF ENGINEERING 135 (1994).

chitect Louis Sullivan wrote: “With me. . . architecture is not an art, but a religion, and that religion but a part of the greater religion of Democracy.”⁹⁴ A libertarian theorist will not seriously question the right of a scientist to express himself under the protection of the First Amendment.

3. The need for limits on technological activity

Despite these convincing arguments, protection for technological speech must not be absolute. Under the current free speech paradigm, government can only regulate political speech if it has a “compelling state interest.”⁹⁵ On the other hand, under *O’Brien* the government can regulate activity that is not speech if it seeks to further “an important or substantial interest.”⁹⁶ Because technological activity would receive far greater protection from government regulation if it were speech than if it were not speech, a court must be able to distinguish technological speech from technological activity that is not speech. For example, if all technological ideas, conduct, and devices were protected speech, the government would be greatly restricted in its ability to impose safety regulations in the auto industry, precautionary measures on human cloning, safety and export controls on arms, zoning regulations on architecture, and safety measures regulating chemicals and drugs.

Free speech protection exists to protect ideas, not conduct or objects. Because government must be able to regulate conduct and objects to provide safety and order, a court must be able to distinguish technological conduct and objects from technological expression. Supreme Court precedent in the “speech-conduct” line supply principles that will help courts distinguish technological speech from technological conduct and objects. The principles that emerge from the “speech-conduct” cases are: (1) an actor’s mere intent to communicate an idea cannot transform activity into speech;⁹⁷ (2) the activity must contain more than a “kernel of expression;”⁹⁸ and (3) the likelihood that those who experience the message will understand it

94. JOHN A. KOUWENHOVEN, *MADE IN AMERICA* 95 (1948) (quoting Louis Sullivan).

95. *Boos v. Barry*, 485 U.S. 312, 321 (1987) (citations omitted).

96. *O’Brien v. United States*, 391 U.S. 367, 377 (1968).

97. *See id.* at 376.

98. *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989).

must be great.⁹⁹ Some libertarian theorists severely criticize the “speech-conduct” approach because it limits an individual’s autonomy and expression.

a. Libertarian considerations. Commenting on the *O’Brien* case, which held that burning a draft card was not protected speech, Steven H. Shiffrin stated, “*O’Brien* is perhaps the ultimate first amendment insult. *O’Brien* is jailed because the authorities find his manner of expression unpatriotic, threatening, and offensive. When he complains that his freedom of speech has been abridged, the authorities deny that he has spoken.”¹⁰⁰ Shiffrin raises an important issue: What constitutes expression and who defines it? For Shiffrin, it seems that the individual should be the ultimate judge of what qualifies as expression. However, this must not be so. If it were, an individual could remove his conduct from all laws based on “substantial” interests simply by alleging that his conduct is expressive (only laws based on a “compelling” government interest would still apply). Even though some extreme libertarian theorists would support protection of all activity an actor subjectively views as expressive, such a system would ultimately jeopardize individual liberty.

According to classical liberalism and social contract theory, a system where each individual delivers a portion of his sovereignty to the state maximizes individual liberty.¹⁰¹ When individuals choose convention (or law) over unrestrained exercise of individual will (or anarchy), the resultant predictability engenders greater liberty. In this fundamental sense, the individual is dependent on the whole for lib-

99. *See* *Spence v. Washington*, 418 U.S. 405, 411 (1974).

100. STEVEN H. SHIFFRIN, *THE FIRST AMENDMENT, DEMOCRACY, AND ROMANCE* 81 (1990).

101. Plato describes an ideal state where “each [person] would be his own best guardian.” PLATO, *REPUBLIC* 42 (G.M.A. Grube trans., C.D.C. Reeve rev., Hackett Publishing 2d ed. 1992) (ca. 380 B.C.). However, he recognizes that those who “lack power to . . . avoid suffering [injustice] decide that it is profitable to come to an agreement with each other neither to do injustice nor to suffer it. As a result, they begin to make laws and covenants.” *Id.* John Locke also describes the social contract:

Men being, as has been said, by nature all free, equal, and independent, no one can be put out of this estate and subjected to the political power of another without his own consent. The only way whereby any one divests himself of his natural liberty and puts on the bonds of civil society is by agreeing with other men to join and unite into a community for their comfortable, safe, and peaceable living one amongst another, in a secure enjoyment of their properties and a greater security against any that are not of it.

JOHN LOCKE, *THE SECOND TREATISE OF GOVERNMENT* 54 (Thomas P. Peardon ed., Liberal Arts Press 1952) (1690).

erty. Because the individual derives liberty through submission to society's rules, a system of unrestricted behavior would be hostile to individual freedom. If law could not govern individual behavior, the strong would prey on the weak and society would move closer to a violent Hobbesian state of nature where the "life of man [is] solitary, poor, nasty, brutish, and short."¹⁰² While the libertarian theory gives great deference to self-expression and individual pursuit of conscience, individual freedom to speak can only survive if it is sensitive in some degree to society's definition of speech. If the established principles of the "speech-conduct" cases are applied to technological activity, individuals will enjoy greater technological self-expression than they would in the chaotic condition that would result if government could only regulate conduct for "compelling" purposes. Like an irrigation canal without any banks, individual expression cannot exist unless minimally channeled.

b. Utilitarian considerations. The utilitarian theory would reject any free speech standard that diminishes the utility of technological speech. A system that protects technological objects and conduct that society does not view as speech will arguably diminish the utility of speech.

Thomas Emerson, a utilitarian theorist, stated: "The guiding principle must be to determine which element is predominant in the conduct under consideration. Is expression the major element . . . [o]r is the action the essence? . . . The answer, to a great extent, must be based on a common-sense reaction. . . ."¹⁰³ If the judiciary limits the majority's ability to pass laws restricting technological conduct and objects to only those laws furthering "compelling" social interests, the judiciary may lose its institutional legitimacy.¹⁰⁴ For example, designers of automobiles and chemical engineers may claim that the technological objects they produce are protected expression. If the judiciary protects such activity as speech and only permits the government to impose regulations furthering a "compelling gov-

102. THOMAS HOBBS, *LEVIATHAN, OR THE MATTER, FORM, AND POWER OF A COMMONWEALTH, ECCLESIASTICAL AND CIVIL* in 3 *THE ENGLISH WORKS OF THOMAS HOBBS OF MALMESBURY*, at 113 (Sir William Molesworth, Bart. ed., 1966) (1651).

103. THOMAS I. EMERSON, *THE SYSTEM OF FREEDOM OF EXPRESSION* 80 (1970).

104. See *Planned Parenthood of Southeastern Pa. v. Casey*, 505 U.S. 833 (1992). One of the main reasons the Court did not overturn *Roe v. Wade* was its fear that the nation would not accept such a decision. The Court stated: "[T]he Court's legitimacy depends on making legally principled decisions under circumstances in which their principled character is sufficiently plausible to be accepted by the Nation." *Id.* at 866.

ernment interest,” it is probable that many safety regulations based on “substantial interests” will be invalidated. In such cases, it is possible, if not likely, the executive branch will have the political support to simply ignore such a judicial mandate.¹⁰⁵ In such circumstances, the court’s ability to protect speech would decrease, and the majority would be less able to benefit from speech once protected by an authoritative judiciary. In essence, a court has the difficult task of protecting minority speech within limits the majority will tolerate. The court must be sensitive to social mores and choose its battles wisely.

C. The Bernstein Court’s Standard Is Too Broad

In order to qualify for free speech protection under the *Bernstein* court’s analysis, one must merely show that the technological expression “is meant to be . . . understood by humans and that it can be used to express an idea or a method.”¹⁰⁶ Furthermore, it must not be understood by the entire audience, but only by those similarly situated (fellow programmers in Bernstein’s case). This test is too broad and undermines both the utilitarian and libertarian theories.

Arguably, many other types of technological conduct and devices would also receive protection under the court’s analysis. For example, architects are paid large sums of money to erect structures communicating ideas such as financial stability, moral responsibility, progress, innovation, chicness, cosmopolitanism, man’s dominion over nature, or simply eccentricity. Of course, architectural structures also have functional roles—providing space to live, work, and recreate. At the same time, an architectural product is expressive, and arguably much more so than source code. Far more people can understand the ideas captured in Shreve, Lamb, and Harmon’s Empire State Building or John Strauss’ Golden Gate Bridge than can understand the ideas expressed in source code. Similar to source code, architecture reveals scientific ideas, mathematical truths, and methodological views to other architects. Furthermore, architectural works are more expressive than source code—they are mythic symbols communicating deep meaning to society at large.

105. In case this scenario seems implausible. The reader will recall that the Supreme Court suffered severe criticism when it invalidated many New Deal programs. Franklin Roosevelt’s court packing proposal and the “switch in time” are evidence that a powerful political majority does have the ability to undermine positions the Court takes.

106. *Bernstein v. United States Dep’t. of Justice*, 176 F.3d 1132, 1140 (9th Cir. 1999).

The *Bernstein* court's analysis would also arguably protect the manufacture of firearms, automobiles, chemicals, drugs, and every other technological undertaking that would communicate ideas or methods to specialized technicians. The *Bernstein* court's subjective approach gives rise to the same utilitarian and libertarian critiques of a purely subjective system described above.¹⁰⁷

D. Toward an Expressive/Functional Test

An approach that would better preserve First Amendment privileges and further its purposes is one that distinguishes between protected expressive activity and unprotected functional activity. The purpose of an expressive/functional test is to distinguish protected technological expression from unprotected technological conduct and devices.

1. Proposed expressive/functional test

The core element of this test is whether a reasonable person within the audience (those likely to actually encounter the activity) would view the activity as primarily functional or expressive. This test has roots in the "speech-conduct" cases already cited in this Note and incorporates three principles: (1) there must be more than the actor's mere intent to communicate an idea;¹⁰⁸ (2) the activity must contain more than a "kernel of expression;"¹⁰⁹ and (3) the "likelihood [must be] great that the message would be understood by those who viewed it."¹¹⁰ If a reasonable person in the audience would view the activity as expressive, the court will proceed to traditional First Amendment analysis. If the activity would be viewed as primarily functional, it is not speech within the meaning of the First Amendment.

This test will undoubtedly tax even the most capable jurist. Admittedly, all human activity contains functional and expressive elements. Even oral or written speech is partly functional and must be so in a physical world (sound waves create physical impressions on ear drums, and photons stimulate retinas). However, the law must recognize that a distinction between primarily functional and primar-

107. See *supra* Part IV.B.3.

108. See *O'Brien v. United States*, 391 U.S. 367, 376 (1968).

109. *City of Dallas v. Stanglin*, 490 U.S. 19, 25 (1989).

110. *Spence v. Washington*, 418 U.S. 405, 411 (1974).

ily expressive activity is not only necessary but also possible. Several factors are helpful in making this determination.

The factors to be used in determining whether an activity is primarily functional or expressive are: (1) the nature of the medium used, (2) the composition and scope of the audience, and (3) the extent to which physical objects involved in the activity represent an idea or reduce human labor. These factors are not weighted and serve merely as guidelines to the court. This approach is designed to offer the flexibility needed in the slippery realm of freedom of speech analysis and provide enough structure to discourage result-oriented decisions. Of course, a stubborn court will doubtlessly be able to engage in result-oriented decision making, but this test will generally discourage such decisions. A deeper exploration of these factors will reveal the strengths, and perhaps the weaknesses, of this test.

a. The nature of the medium. Choice of medium often affects the composition of an actor's audience (for example, publishing to the Internet instead of e-mailing). A medium's effect on the size and composition of an audience and, hence, an audience's ability to understand a message is treated in the next section.¹¹¹ The choice of medium also affects the expressive nature of a message.¹¹² For example, communication in a language both parties understand is more expressive than communication in a language neither party understands well.¹¹³ *Ceteris paribus*, if an actor uses a medium that is less expressive than other media, an inference arises that the actor is more concerned with functional aspects of the activity in question.¹¹⁴

For example, the *Bernstein* court points to "blueprints, recipes, and 'how-to' manuals" as expressive media with functional elements.¹¹⁵ If one wishes to communicate to another the process whereby one makes a car, a how-to manual will be more expressive than a finished automobile. In the latter instance, it will be presumed

111. See *infra* Part IV.C.1.b.

112. See generally MARSHALL McLuhan, *THE MEDIUM IS THE MESSAGE* (1967). "Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication." *Id.* at 8.

113. See, e.g., *infra* note 114 and accompanying text.

114. *Ceteris paribus* is a Latin term meaning "other things being equal." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 368 (1971). Admittedly, this is an argument similar to that made in the time, place, and manner context. Because this Note addresses the problem of how to define speech, and not what level of protection qualifying speech should receive, a thorough discussion of time, place, and manner principles is best left for another day.

115. *Bernstein v. U.S. Dep't of Justice*, 176 F.3d 1132, 1142 (9th Cir. 1999).

that the party furnishing the finished automobile is more concerned with functional aspects of the automobile than communicating the process of making an automobile.

b. The composition and scope of the audience. Actors generally have control over the scope and composition of their audience. Suppose an actor desires to communicate to a specific audience that will universally understand his message. If the actor uses a medium that increases the size and alters the composition of the audience such that most of the audience does not understand the intended message, then there is an inference that the activity is primarily functional and not expressive.

For example, an actor who publishes a computer program to the Internet in an attempt to make it available to programmers (for whom he also has e-mail addresses), is less concerned with speech than an actor who simply e-mails the program to his programmer friends. This factor helps determine the intent of the actor, but the audience's perception of the activity is the chief concern. An actor's intent to communicate cannot by itself transform an audience's perception of an activity from functional to expressive. An actor can increase the availability of free speech protections by narrowing his audience to those who will understand the message.

c. The extent to which the object represents an idea or reduces physical human labor. Every expressive activity involves some physical object, such as paper, air molecules, or sound waves. However, the purpose of free speech is to protect ideas not objects. Objects are only protected to the extent they represent ideas or are immediately connected to the communication of ideas. For example, while paper does not generally represent ideas, it is essential to the expression of ideas in writing. Free speech principles would protect the use of paper to the extent it is used to communicate ideas. However, if paper towels are used to mop up spilt milk, the paper is not being used to communicate ideas but to reduce the human labor needed to clean up spills. Of course, all technology reduces human labor to some extent, thereby theoretically giving individuals more time to think and exchange ideas. However, an object's connection with expression must be close and immediate in order to be protected under free speech principles. What is more, minimal human involvement to facilitate the object's purpose should not affect a determination of functionality or expressiveness.

For example, even though an automobile is not functional until a human starts it, turning a key in an ignition should not detract from an automobile's functionality. Likewise, pressing a button to convert source code to object code should not significantly affect a determination of its expressiveness or functionality. At the same time, an object's ability to perform incidental work should not affect its expressive nature. For example, Michelangelo's statue of David should not be characterized as functional because it can be used as a bird perch. In each circumstance, the court should determine the most natural purpose of the object from the audience's point of view.

2. The expressive/functional test furthers the purposes of free speech

As we have seen, the fundamental purpose of freedom of speech is to protect minority expression from possible oppression by the collective strength of a majority. According to the two prevalent theories of free speech, minority speech should be protected as a means to preserve democracy and thus prevent the majority from harming itself (utilitarian theory), and because expression of one's ideas is an end in itself (libertarian theory). Both theories require that courts fashion a standard of free speech that protects the minority's ability to speak but also caution that extending speech protection too far ultimately jeopardizes freedom of speech.

The expressive/functional test limits actions protected under freedom of speech within bounds society will tolerate, and by so doing ensures the continued vitality of an individual's right to express conscience. The test accomplishes this goal in two fundamental ways. First, the test separates functional activity from expressive activity (something the *Bernstein* court does not do) and thereby excludes nonspeech activity from protection. Secondly, the test provides a partially objective standard in making the distinction between functional and expressive activity—the test employs the viewpoint of a reasonable audience member. By employing a partially subjective standard (the viewpoint of a reasonable audience member instead of a reasonable member of society), the expressive/functional test still protects the individual from oppressive majorities. With these two precautions in place, it is more likely the judiciary will protect its legitimacy in the eyes of the public and, therefore, preserve its power to enforce free speech principles. Furthermore, political processes will better resolve tension between segments of society, and a greater sense of community will engender greater individual liberty. By protecting

individual activity within limits the majority will tolerate, the expressive/functional test successfully serves the dual purposes of speech protection. It remains to be seen how exportation of encryption source code over the Internet will hold up under this test.

3. Application of the expressive/functional test to the facts in Bernstein

The first factor is the actor's choice of medium. The court emphasized the differences between source code and object code, pointing out that source code could not actually perform any function until compiled into object code.¹¹⁶ This is an insignificant distinction. The same argument could be made by stating that an automobile is more expressive than functional because one must turn the ignition key before it starts; thus only a running automobile is functional. Under this factor, it is clear that encryption source code is a medium with functional characteristics. It is also clear that source code is an expressive medium because programmers use it to express complex mathematical ideas to other programmers. Because the use of a functional medium creates a presumption that the actor is more concerned with function than with expression, the crucial determination is whether source code is the least functional medium by which Bernstein can convey his message.

If Bernstein simply wished to express mathematical principles, he could surely do it on paper. By using source code, one purpose of which is to control a computer, Bernstein was doing more than simply conveying mathematical ideas. At the very least, he wanted to convey mathematical ideas in the context of encryption programming. More likely, Bernstein wanted to promote encryption technology by providing an encryption program to other programmers and computer users. This indicates Bernstein's purpose was not only to comment on encryption as an abstract academic problem but also to provide a device to be used in practical situations. In essence, Bernstein said: "Fellow programmers, here is a good encryption program. What do you think?" The most effective, and perhaps only, way to communicate this message was to provide the actual program. Any other medium would not have the same effectiveness as being able to see the program actually work on a computer. Under this

116. *See id.*

factor, Bernstein probably could not have used a less functional medium to convey the same message.

The next factor is the scope and composition of the audience and its ability to understand the message. The majority of people accessing Bernstein's program on the Internet would not understand its expressive elements. While it would be impossible (and perhaps an invasion of privacy) to know the identities of each Internet user accessing Bernstein's site, it is likely the majority of the actual audience would be nonprogrammers interested in the functional use of Bernstein's encryption program. Bernstein could have restricted his audience to programmers by providing access instructions on his Internet site only those who understood source code could follow. He also could have distributed the program by e-mail to those within his academic circle or solicited programmers' e-mail addresses on his web site. Because Bernstein made the program available to an audience that he knew would, for the most part, only understand its function, this factor indicates that the program is primarily functional.

Finally, Bernstein's encryption source code is a tool capable of performing the function of encryption. Bernstein's program would greatly reduce the amount of human labor needed to encrypt. Such work is not incidental to any expressive purpose, thus indicating that the program is primarily functional. Furthermore, this interpretation of Bernstein's program is not unnatural.

After exploring these factors, it is likely that a reasonable member of the audience would view publishing encryption source code to the Internet as primarily functional. Therefore, Bernstein's source code should not qualify as speech within the ambit of the First Amendment.

V. CONCLUSION

The *Bernstein* court ignores important principles in Supreme Court "speech-conduct" precedents. It does so by redefining free speech protection to encompass any activity with only minor elements of expression. Because all human activity is imbued with elements of expression, the court's free speech formulation will open a Pandora's Box. Free speech claims will inundate the courts, but more importantly, the *Bernstein* decision endangers long-term free speech protection. Such a condition will ultimately discredit the courts and undermine the purposes of freedom of speech.

663]

Bernstein v. United States Department of Justice

The expressive/functional test advanced in this Note is consistent with the principles embodied in “speech-conduct” precedent because it bases the distinction between expression and function on the viewpoint of a reasonable member of the audience, not the subjective view of the individual actor. By basing the distinction between functional and expressive activity on the views of the audience, rather than on the subjective views of the actor, the expressive/functional test preserves social order while permitting individual liberty. Such a balance most adequately protects the freedom to voice one’s conscience in a democratic society.

Seth Hanson